

Seattle Fire Prevention Division

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System Test Report – Annual Testing and Maintenance

Distributed Antenna Systems (DAS)		STATUS		
<input type="checkbox"/> Confidence Test	<input type="checkbox"/> Deficiency Repair Test	<input type="checkbox"/> Red	<input type="checkbox"/> Yellow	<input type="checkbox"/> White

SECTION 1 BUILDING CONTACT AND DAS INVENTORY INFORMATION (for jurisdictions with TCE, enter once, will re-populate in each subsequent test)

Section 1.1 Building Address and Contact Information

Building Name: _____

Building Address: _____

Building Contact Name: _____

Building Contact Phone: _____

Contact Address: _____

Contact Email: _____

Central Station Monitoring: ☐ Yes ☐ No

Monitoring Required: ☐ Yes ☐ No

Monitoring Company Name: _____

Monitoring Company Phone: _____

Section 1.2 DAS Inventory

System Make: _____

System Model: _____

Location of System in Building: _____

Applicable Code Year/Building Permit Issue: _____

Rebanding Retune Completed? _____

PSERN Retune Completed (after 2020 Retune Date)? _____

SECTION 2 TESTING COMPANY, TECHNICIAN AND EQUIPMENT

Section 2.1 Testing Company Information for Current Test

Company Name: _____

Phone: _____

Contact Name: _____

Emergency Phone: _____

Mailing Address: _____

Email: _____

Section 2.2 Technician Information for Current Test

Technician Name: _____

Phone: _____

For DAS Located in Seattle, Please Complete This Additional Section:

Technician FCC Certification/GROL#: _____

Technician performing testing has received manufacturer training or other equivalent: ☐ Yes ☐ No

Specify training received and date: _____ 20____

Section 2.3 Testing Equipment for Current Test

Spectrum analyzer make/model**: _____

Calibration date: _____

Calibration performed by firm (qualified firm name): _____

*** Use of a calibrated spectrum analyzer, with a current calibration, is required for this testing.*

SECTION 3 CURRENT TEST – REQUIRED ELEMENTS AND TEST CHECKLIST

Date of Test: _____

The items on the checklists below shall be inspected and tested. This list does not constitute all of the required inspecting and testing of the fire and life safety system. Refer to the CURRENT FIRE CODE AND REFERENCED NFPA STANDARD and the MANUFACTURER'S INSTRUCTIONS for weekly, monthly, and/or quarterly inspecting and testing requirements.

Section 3.1 Pre-Test Check

Take precautions necessary to avoid preventable alarms.

1. If a monitored fire alarm system is present in the building, the Central Station Monitoring Service was notified that DAS testing is occurring and will be generating supervisory signals. ☐ Yes ☐ No ☐ N/A

Section 3.2 General - Recordkeeping

2. The following documents from the installation/acceptance testing are stored in the same room as the head end electronics and available to technicians and fire personnel:

- | | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-----------------------------|
| a. Grid diagram for each floor, showing tested strengths in each grid square. | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| b. Copies of manufacturer specification sheets for all BDA/DAS systems components, including amplifiers, signal boosters, antennas, coax, couplers, splitters, combiners, and other passive components. | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| c. Data sheets for backup battery and charging system | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| d. Certification letter stating that the BDA/DAS system has been installed per code and was complete/fully functional at time of install. | <input type="checkbox"/> Yes | <input type="checkbox"/> No |

Section 3.3 DAS Specifications/Performance at Commissioning and Current

	At Commissioning (enter once, will auto-populate in TCE in subsequent tests)	Current Test
Antenna Type		
ERP to Donor Site (dBm)		
Antenna Gain (dBd)		
Antenna Coordinates (NAD83)		

Antenna Azimuth (degrees true)		
Uplink Gain Setting	Gain Setting: _____ db Power: _____ dbm	Gain Setting: _____ Power: _____ dbm
Downlink Gain Setting	Gain Setting: _____ db Power: _____ dbm	Gain Setting: _____ Power: _____ dbm
Signal Level Received at Donor Site (-dBm) <i>Measure active control channel, w/20 KHz resolution bandwidth, at the jumper that connects to the DAS head-end donor port.</i>		
Signal Level Received from Donor Site (-dBm)		
Channelized Donor Site Name		
Channelized or Broadband		

Section 3.4 Active Components

3. Signal booster is within a NEMA 4 Enclosure (or IP66 if approved by Fire Marshal).	<input type="checkbox"/> Yes	<input type="checkbox"/> No
4. Battery is within a NEMA 4 Enclosure (or IP66 if approved by Fire Marshal).	<input type="checkbox"/> Yes	<input type="checkbox"/> No
5. Battery is supervised by Fire Alarm System.	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> N/A
6. Signal booster is supervised by Fire Alarm System.	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> N/A
7. Equipment is FCC certified. If no, list corrections required: _____ _____ _____	<input type="checkbox"/> Yes	<input type="checkbox"/> No
8. Active components checked to verify operation within manufacturers' specifications:		
a. Equipment alarm log checked for recurring or substantial alarms and addressed as per manufacturer's recommendations.	<input type="checkbox"/> Yes	<input type="checkbox"/> No
b. Isolation testing performed and measured system isolation is at least 20 db above the total downlink and the total uplink gain (whichever is greater) between least isolated DAS antenna and the donor antenna.	<input type="checkbox"/> Yes	<input type="checkbox"/> No
9. Signage at Fire Alarm Panel "This building is equipped with an Emergency Responder Radio Coverage System" (Zone 1 only)	<input type="checkbox"/> Yes	<input type="checkbox"/> No
10. DAS is communicating with same donor site as identified at time of commissioning or communicating with approved donor site as documented in writing by Radio System Operator or Authority Having Jurisdiction.	<input type="checkbox"/> Yes	<input type="checkbox"/> No
11. DAS signal strength received from donor site at the input to the BDA meets original installation values plus or minus 2 db.	<input type="checkbox"/> Yes	<input type="checkbox"/> No
12. Uplink amplifier gain matches gain at commissioning plus or minus 2 db.	<input type="checkbox"/> Yes	<input type="checkbox"/> No
13. Downlink amplifier gain matches gain values recorded at commissioning plus or minus 2 db.	<input type="checkbox"/> Yes	<input type="checkbox"/> No
14. Antenna azimuth (bearing) matches commissioning matches commissioning azimuth plus or minus 5 degrees.	<input type="checkbox"/> Yes	<input type="checkbox"/> No

Section 3.5 Distribution System

15a. Perform grid test: Signal strength remains stronger than (less negative than) -95 dBm for 90% of grids on each floor in non-critical areas

☐ Yes ☐ No

If no, location(s) of failed grids: _____

15b. Create/verify list of critical areas in this building (once list is correct, select Yes)

☐ Yes ☐ No

15c. Critical areas are provided with 99% floor area radio coverage with coverage stronger than -95 dBm.

☐ Yes ☐ No

If no, location(s) of critical areas that do not meet threshold:

15d. Perform functional (talk-back) testing in each critical area using one radio in the building and one radio outside the building – radios function sufficiently for talk back testing.

☐ Yes ☐ No

If no, location(s) of non-acceptable communications:

15e. Perform functional (talk-back) testing in each critical area – is communication possible between the handheld radios?

☐ Yes ☐ No

If no, location(s) of non-acceptable communications:

Section 3.6 Batteries/Secondary Power

16. Backup batteries and secondary power supply tested under load for one hour and meet requirements.

☐ Yes ☐ No

Section 3.7 Alarm Panel Monitoring

17. If a fire alarm system is present in the building, the fire alarm system is supervising the DAS.

☐ Yes ☐ No ☐ N/A

18. If a fire alarm system is present in the building, a supervisory signal was received at Central Station Monitoring company.

☐ Yes ☐ No ☐ N/A

18a. For buildings without a fire alarm system, a dedicated monitoring panel annunciates supervisory and trouble signals for the signal booster system and power supply(ies) and sounds an audible signal at a constantly attended location.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
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Section 3.8 Final Checks

19. If building includes a fire alarm system, inform alarm monitoring company that testing is complete.	<input type="checkbox"/> Yes	<input type="checkbox"/> No
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SECTION 4 SIGNATURES AND REPORTING

20. A copy of this test report will be given to the owner in either electronic or paper form and a status tag was posted on the DAS.	<input type="checkbox"/> Yes	<input type="checkbox"/> No
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21. A copy of this test report will be provided to the Fire Department as required, by uploading report into The Compliance Engine, within seven days of the date of the test. www.thecomplianceengine.com	<input type="checkbox"/> Yes	<input type="checkbox"/> No
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By accepting this statement I, the certified technician shown on this form, certify that this fire protection system(s) has been properly inspected for functional operation in accordance with the current Fire Code (FC) used by the department that has jurisdiction and NFPA Standards adopted by the FC for this system. Any deficiencies found are noted in the report and have been reported to the building Owner/Manager for corrective action.	<input type="checkbox"/> Yes	<input type="checkbox"/> No
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I am authorized to submit this report for the certified technician who has accepted this statement.	<input type="checkbox"/> Yes	<input type="checkbox"/> No
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SIGNATURES (OPTIONAL)

Signature of Technician	
Signature of Building Representative	